

FILE
SOUTHGATE
GARDENS

CITY OF SPRINGFIELD
INTER-OFFICE MEMORANDUM

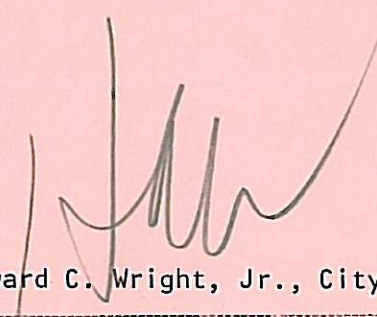
ATTENTION OF Charles H. Criswell, Assoc. San. Engineer DATE May 20, 1975

DEPARTMENT P.W. - Sanitary Services

Re: Pesticide Spill - April 28, 1975

Certify the cost of the pesticide spill on April 28, 1975 to the persons that caused the problem. If you have any trouble collecting the cost, please notify the Law Department.

/pe


SIGNED Howard C. Wright, Jr., City Attorney

227 W. PORTLAND

SPILL CHRONOLOGY

4-28-75 - Monday

- 17:56 Call to Fire Department by resident (? at 227 W. Portland, or 217). Fire Company #36, Station #6 responded to 227 W. Portland and apparently washed spilled material from street in front of above address.
- 18:03 I received a call from City of Springfield Service Center relating that a white substance was running along a curb on S. Campbell Avenue north of Portland Street. I arrived at spill site at approximately 18:10. There was evidence of spillage in the street in front of the residence at 217 West Portland Street, and of that spillage being washed away. Pools of material were evident at low places in driveway entrances, and two large pools were seen in a driveway shared by 223 and 227 W. Portland, one as far as ninety-seven (97) feet from the curb line. Neighborhood residents were hurriedly interviewed. They related that a five gallon can of some material had fallen off of the back of a truck and that the Fire Department had washed the material away. They thought they could recall the name of the material as Firemen had picked up the container which still had a label on it and had told them what it was, but the best they could remember was Formaldehyde. The odor indicated otherwise and because of the similarity in the last part of the name (...maldehyde) I suggested the possibility of malathion and all replied affirmatively as to having been told that. We proceeded on the assumption that the material was in fact malathion but later considerations proved otherwise. I advised the residents that if that was the material in question (it seemed apparent that it was a pesticide of some formulation) it was toxic and they should take precautions to keep away from contact with the material or its vapors and keep animals away until it could be removed or made harmless. One resident, Mrs. Hickey of the 227 address, informed me that her small son (age 1+) had walked through a pool of the material. I advised her to immediately take him inside and bathe him and to watch him closely for the next few hours and to get immediate medical attention if he should show any signs of nausea, vomiting, appetite loss, hyperactivity, or any other symptoms of abnormal behavior. I explained that malathion was a toxic chemical but of much less severe toxicity than most pesticides. It is routinely used as a spray for fruit trees while budding but still potentially very dangerous, and that the material was readily absorbed through the skin.
- 18:15 The path of the spilled and washed material was then followed to the west to Campbell Avenue, then north a short distance to Minota Street where the material crossed Campbell and flowed west again down the Minota curblane. The leading edge of the flow was some twenty-five to

227 W. Portland

thirty feet from a storm sewer inlet grate at Grant Avenue when overtaken. An attempt was made to halt or impede the flow at that point by piling sticks and grass clippings across the pathway of the flow. I then drove to the Service Center to get a city vehicle, absorptive material and other equipment necessary to remove the material from a waterway.

Upon arrival at the Service Center I asked that a load of sawdust be taken immediately to the intersection of Grant and Minota and spread on the spilled material. I then attempted to telephone Harold Bengsch, City Chief of Environmental Hygiene. I was uncertain as to whether or not application of lime to the pooled material would render it unpalatable to animals so that it would not have to be physically removed. Total removal would have been difficult if not impossible. I was unable to contact Mr. Bengsch.

I next attempted to contact Robert Schaefer, Sanitary Services Division Superintendent. I contacted David Snider, Director of Public Works and informed him of the situation. He contacted Mr. Schaefer shortly thereafter and Mr. Schaefer was subsequently able to contact Mr. Bengsch and relay his advice to me via radio vehicle while I was en route back to the spill site.

I arrived at Grant and Minota simultaneously with the sawdust. We began spreading the material from that point eastward to Campbell. I had no way of determining the quantity of material which entered the storm grate at that time. In the meantime, my wife, who had accompanied me to the site originally and then to the Service Center, arrived back and I asked that she locate and bring back a number of bags of lime for use on the driveways on Portland. I then proceeded to the point where the storm sewer box opened to an intermittent stream near where Minota and Ildereen Streets intersected with Thelma Avenue. No material was visible and the stream, tributary to Fassnight Creek, was not flowing. A pool of water was standing at the box outlet and was contained by natural terrain. Owing to the natural entrapment and to the fact that the material appeared to be water emulsified, no further containment was immediately contemplated.

I then returned to the area on West Portland and asked residents for all available details of the events while I waited for lime and additional sawdust to arrive. While waiting, I extracted a sample of the material from the large pool in the driveway shared by 223 and 227. Three hundred (300) pounds of lime were used in and along the driveways at 223, 227 and 301 West Portland. Four (4) tons of sawdust were used. To that point in time, neither the Hickey child nor the McCullough dog (223 W. Portland) showed any apparent symptoms of exposure. I returned home at about 21:45.

4-29-75 - Tuesday

07:20 I checked area of spill in daylight. I was not able to find additional pooled material which had not been absorbed with lime slurry. The odor of the spilled material was still very strong.

08:30 I returned to the closed storm sewer box with Randy Lyman and Gene Pabst and the sewer maintenance crew of Omer Boyce, Raymond Towe and Loren Davis with the power flusher. An attempt was made to flush the contents of the closed section of the storm sewer out into the naturally contained area at its opening. We had the means available and on hand to pump the material from that area into a 3000 gallon tank truck and had a remote area where it could be spread on land and lime applied. The elevated pH and exposure to sunlight would hasten degradation.

With virtually a total malfunction of the City's radio communications system, we lost control of the regulation of the water used in flushing with the result that the material moved some fifty feet farther than anticipated. It was still naturally entrapped but in multiple shallow pools and not conducive to pumping. We left the material to be exposed to sunlight and to soak into the ground while we sought further advice.

09:45 I returned to the office and called Harold Bengsch to explain the situation. He said that he would contact Mr. Lee Anderson, U.S. Environmental Protection Agency Pesticide Research Laboratory, Washington, D.C., and would call me back. I next called Mr. Bob Hentges, Spill Coordinator for the State of Missouri. Mr. Hentges said he would return the call within ten minutes. I waited only four or five minutes and received a call from Lee Frisbe, Chemagro, expert in pesticide handling and disposal. He had been contacted by the Chemical Transportation Emergency Center (CHEMTREC), a nationwide network of people to provide prompt emergency information. His advice was to leave the material exactly as it was and allow sunlight to degrade it. I asked if lime application would be helpful and he indicated that it was optional and would not really hasten the degradation process greatly. Malathione was low in toxicity (relatively speaking) but fairly stable. Mr. Anderson's advice was virtually identical.

11:00 Gene Pabst and I went to Fire Station No. 6 (1300 Block of S. Campbell) while Randy Lyman took the sample extracted the previous night to the City Health Department Laboratories where an attempt was made to confirm the material as malathione by thin-layer chromatography. The chain of custody of that sample is as follows: Sample was collected at approximately 19:15, April 28, 1975 by H. Criswell and was continuously in his custody until transfer to R. Lyman at approximately 10:30, April 29, 1975, who then transferred it to the Health Laboratories at approximately 11:00, April 29, 1975. The sample has been in the custody of that laboratory continuously since that time.

At the Fire Station, we asked for and got permission to review the report of the Fire Company responding to the spill incident the previous evening. The report stated that at 17:56, Company #36 responded to a call and "washed down pesticide (Toxaphene) from street." The report was signed by Gary N. Gourly.

The appearance of the name Toxaphene on the report was the very first indication we had that the material in question might not be malathione. I asked if the container was still around and was told that it would be in the possession of a man named Journigan, one of the firemen who responded. I was told that in addition to employment by the City, he worked for an extermination contractor. I also was given the name of the Battalion Chief in attendance at the incident, Mr. Howard Thurmond, and spoke with him by telephone to gain further details. He informed me that a five (5) gallon can of Toxaphene had fallen off of a truck and was covering an area approximating thirty-five (35) feet in length on the street and that they had simply washed it away. When I related how far it had washed and its present disposition, he advised me that any further information I wanted would be available only through the Fire Chief.

12:00 We returned immediately to the office and called Harold Bengsch to inform him of the probability of Toxaphene. The matter was of deep concern due to more than a hundred-fold increase in toxicity attributable to Toxaphene as compared to Malathione. We asked that the laboratory set up T.L.C. with standards of both. Mr. Bengsch indicated that he would re-contact Mr. Anderson in the E.P.A. Lab in Washington. In the meantime, I again called Bob Hentges to keep the State advised and seek further advice from that source. All sources contacted indicated that the material was in as good a position as could be hoped for, open to sunlight and soaking into the ground. The consensus of opinion also dictated that an application of lime would again elevate the pH slightly and render any pools unpalatable to pets or stock. Additionally, Toxaphene degrades much more rapidly than Malathione and the pH adjustment would speed the process.

14:00 We applied an additional two hundred (200) pounds of lime. The largest part of the material had soaked into the ground by this time and the lime was used generously where there were pools shaded from direct sunlight. The weather forecast called for 30% probability of rain.

15:00 We returned to the original spill site and took photographs of the area.

21:00+ Generally heavy rain and hail fell in the Springfield area.

4-30-75 - Wednesday

08:00 Stream surveillance in Fassnight Creek and Wilson Creek (to which Fassnight is tributary) for a distance of some four to five river miles did not indicate that any kill of aquatic biota had occurred. Additionally, we received no reports of any such kill further downstream.

10:00 Bob Schaefer, Greg Cole and Harry Criswell met with Fire Chief Charles Grant. The Toxaphene spill was discussed in detail along with a number of other incidents of materials being washed from streets. The meeting was extremely productive and a line of communication opened which had previously not existed. We asked again about the present custody of the container and Chief Grant said that he would gladly attempt to locate it for us.

Approx 11:00 I spoke again with the Health Department laboratory regarding their confirmatory analysis. They related that the material was probably Toxaphene but that there was another active ingredient present, possibly chlordane. There was no malathione present. I discussed with them again the fact that a young child had been exposed by skin contact and Health officials sought to interview the child's parents later that same day and set up an appointment for medical examination and tests at the City Clinic the following day.

Approx 14:30 Call received from the Fire Chief's office relating that the container implicated in the spill incident was now available at Fire Station No. 6.

5-1-75 - Thursday

08:15 Mr. Lyman and Mr. Pabst secured the container from the Fire Station.

I received a call from Harold Bengsch regarding the Health Department's interview with the Hickeys. He related that the child was to be examined that morning and that the laboratory tests would include a liver enzyme profile. He further told me that the interview had indicated that the child was a "pica" (exhibited an unnatural craving to eat certain types of material which are not food, like chalk, crayolas, paint chips, etc.) and had shown tendencies to eat soil and put driveway gravel in his mouth. The child's mother further stated in the interview that she was amazed to learn that the spilled material was hazardous since she had seen the child who was there stick his finger into the material at least two or three times and then into his mouth to taste it. Mr. Bengsch asked that we consider covering the driveway at the Hickey residence with sawdust to keep that child and possibly others from getting to the gravel. (The gravel had absorbed some quantity of the pesticide)

10:30 Accordingly, we asked and received permission of the owners to cover the driveway shared by 223 and 227. That driveway was covered to a distance of about one-hundred ten (110) feet from the north curblin of Portland. The only other driveway which apparently received any significant amount of the wash down was that at 301, the residence immediately to the west of the Hickey's. We were unable to contact owners or residents there, so only covered fifteen (15) feet from the curblin, that distance coinciding with the extent of our easement. That covering seemed to cover the affected area as determined by the odor of the gravel.

In the meantime, the container was brought back to the office and photographed. One of those photographs shows the shipping label where the material was originally sent from the distributor. That label reads:

Southgate Gardens, Inc.
3157 S. Campbell
Springfield, Mo.

The container was then taken to the Health Department laboratory. Additionally, Health officials were to contact Southgate to attempt to ascertain responsibility for the loss. Attached to this report is the memorandum describing that contact. In my later discussions with Mr. Bengsch, he indicated that the manager at Southgate had verbally admitted to the loss.

In summary, a spill originally covering 35 feet required a clean-up of about 3725 feet. The washed material travelled:

370' west on Portland to Campbell
210' north on Campbell
70' northwest diagonally across Campbell
1285' west on Minota to Grant,
entered the closed storm box
1140' westnorthwest in the storm box under Minota
650' westerly in open intermittent stream
(before the rain)
3725' total travel

Total materials used:

4-28-75 300 lbs. lime
4-28-75 4 tons sawdust
4-29-75 200 lbs. lime
5- 1-75 1.5 tons sawdust

CONCLUSIONS:

The application of water to the spilled material was a mistake. The clean-up could have been relatively easy. The water not only made the task more difficult for the portion which could be recovered, but drove a portion of the material to a point where it was virtually inaccessible. In addition it probably increased the threat to life and property. The pool in the driveway between 223 and 227 W. Portland where the sample was taken was some 65-80' from the curbline and a smaller pool was almost 100' from the curb. Analyses from the larger pool showed a concentration of about forty (40) percent active ingredient. The concentrate is commonly sold as either 59 or 60% active ingredient. (590,000 or 600,000 parts per million. Toxicity to some aquatic organisms has been demonstrated to be less than one part per million).

Timing is critical. A response to the spill concurrent with Fire personnel could possibly have prevented the flushing. Even failing that, an earlier response may enable confinement of spilled material to a smaller affected area.

Availability of material is critical. Response to this particular spill incident was made before the material actually entered a closed storm sewer. Had proper materials been immediately available, it would have been possible to prevent the spillage from entering a stream. Had the storm box at Grant and Minota been directly tributary to a moving stream of water, it is my best judgment that the quantity of material entering it would have been sufficient to do gross environmental damage for a long distance.

When emergencies present themselves, Fire and Police usually receive calls before or instead of any other agencies. The opening of communications with these agencies seems the logical approach to notification.

RECOMMENDATIONS:

1. The dispatchers for both Fire and Police should be supplied with ready means for contacting personnel knowledgeable of spill control and countermeasure, and information relating to circumstances and situations which would require our response.

2. In order that the means for contact be as straightforward and reliable as possible, it is recommended that the dispatchers be supplied with a single telephone number whereby a response could be obtained at all times. This could be easily accomplished with a rental pager, the telephone number being that of the transmitting encoder. A special contractual account was set up in this 74-75 fiscal year budget expressly for this purpose. I recommend that this

expenditure be approved and that necessary funds be allocated for the next fiscal year. Present cost would be twenty-five (25) dollars per month.

3. In order that the necessary materials be immediately available, it is recommended that one vehicle be equipped with the spill response equipment now on hand (trash pump, suction hose, fire hose, sand bags, absorbant material, lime, 2 x 6 lumber) plus a few other items such as a short length of field fence or chicken wire and straw, and that this vehicle be authorized to be kept in the constant possession of one of the employees in surveillance and enforcement.

Charles H. Criswell
Associate Sanitary Engineer
Water Pollution Control

CITY OF SPRINGFIELD
INTER-OFFICE MEMORANDUMATTENTION OF Harold Bengsch, Chief of Environmental Hygiene DATE May 5, 1975DEPARTMENT Health

On May 1, 1975, I was instructed to make an inquiry of Southgate Gardens as to the procedure that this greenhouse used in handling the pesticides they use in their business. This was a follow-up on the pesticide spill in the 200 block of West Portland.

I contacted Mr. Stephen Dorrell, manager of Southgate Gardens at 3157 South Campbell, Springfield, Missouri. I showed Mr. Dorrell the 5 gallon container found at the site of the spill. He at first said this was possibly not one of his containers. It was pointed out to Mr. Dorrell that the address that the container was sent to was Southgate Gardens, 3157 South Campbell, Springfield, Missouri. He then acknowledged that it could be one of his containers.

I then asked Mr. Dorrell what type of truck they used in their work and what procedures were used when handling the pesticides. He said that they use flat bed trucks with 2 feet high stake sides and that his men were instructed to make sure all materials were well inside the stake sides of the bed. He also said that he may have to have his men put the pesticide containers inside the tool boxes on the trucks.

I asked Mr. Dorrell if any of his men had been working in the 200 block of West Portland where this container was found. He said yes, he knew who had been working in that area and would have a little talk with that man.

I thanked Mr. Dorrell for his cooperation and returned to the office to fill out this report.

/ag

SIGNED

*Thomas W. Fare*Thomas W. Fare
Vector Control Specialist II

227 W. PORTLAND